WHAT IS CLAIMED IS:

1. A double confocal scanning microscope (1) having at least one light source (3) defining an illuminating beam path (2), at least one detector (5) defining detection beam path (4), a plurality of components (6, 10, 13, 14) arranged in the illuminating beam path (2) and the detection beam path (4) wherein the optical properties of the components (6, 10, 13, 14) arranged in the beam path are coordinated with one another and the accumulated aberrations, with respect to the optical axis (33) and/or at least one surface (18, 19, 20) in the specimen region, are at least of the order of magnitude of the theoretically achievable resolution capability.

2. The scanning microscope as defined in Claim 1, characterized in that the surface (19) in the specimen region is at least partially coincident with the focal plane (16) of the objectives.

3. The scanning microscope as defined in Claim 1, characterized in that at least two surfaces (18, 20) in the specimen region arranged symmetrically with respect to the focal plane (16) are defined.

4. The scanning microscope as defined in Claim 1, characterized in that a beam splitter (10) of an interferometer is provided in the illuminating beam path (2) and the detection beam path (4), thereby defining a first and a second individual partial beam path (21, 22) wherein the accumulated aberrations of the of the interferometer are made opposite to one another.

5. The scanning microscope as defined in Claim 4, characterized in that objectives (13, 14) are provided and wherein the accumulated axial aberrations of the individual partial beam paths (21, 22) of the interferometer are made opposite to one another with respect to at least one surface (18, 20)

in the specimen region parallel to the focal plane (16) of the objectives (13, 14).

6. The scanning microscope as defined in Claim 4, characterized in that the accumulated lateral aberrations of the individual partial beam paths (21, 22) of the interferometer are made opposite to one another with respect to the optical axis (33).

7. The scanning microscope as defined in Claim 1, characterized in that the optical components are corrected and the correction consists essentially of image sharpness errors, image scale errors, chromatic aberrations, spherical aberration, astigmatism, image field curvature, distortion, coma, longitudinal chromatic aberrations, transverse chromatic aberrations and chromatic magnification errors.

8. The scanning microscope as defined in Claim 7, characterized in that correction of the chromatic aberrations is provided for a wavelength range from 200 nm to 2000 nm.

9. The scanning microscope as defined in Claim 1, characterized in that the polarization properties of the optical components are coordinated with one another.

10. The scanning microscope as defined in Claim 1, characterized in that at least one optical component (17, 8) is positionable.

11. The scanning microscope as defined in Claim 10, characterized in that one optical component is a detection pinhole (17) and the detection pinhole (17) is positionable.

12. The scanning microscope as defined in Claim 11, characterized in that the detection pinhole (17) is positionable in the axial direction.

13. The scanning microscope as defined in Claim 12, characterized in that the axial positioning of the detection pinhole (17) causes no lateral offset.

14. The scanning microscope as defined in Claim 12, characterized in that any unwanted lateral offset upon axial positioning of the detection pinhole (17) is compensated for with a correction means.

15. The scanning microscope as defined in Claim 14, characterized in that the detection pinhole (17) is positionable in the lateral direction and/or a beam splitter (8) or a mirror is arranged tiltably.

16. The scanning microscope as defined in Claim 11, characterized in that the detection pinhole (17) is embodied as a chromatically selective component (24, 25).

17. The scanning microscope as defined in Claim 16, characterized in that at least one corresponding chromatically selective component (24, 25) is provided for each detected wavelength region.

18. The scanning microscope as defined in Claim 16, characterized in that a multi-band detector (32) is arranged after the chromatically selective component (24, 25).